REMARKS

Claims 1-3 are presently pending in the application.

Claims 1 and 2 have been amended to recite "a thiophosphite" rather than "a monoalkylthiophosphite, a dialkylthiophosphite, a trialkylthiophosphite," which is supported in the specification at least at page 10, line 9; at page 14, last three lines; and in Example 5-6. Claims 1 and 2 have also been amended to delete "dithiocarbamate" and "dihydrocarbylpolysulfide" from the list of sulfur-containing compounds in Component (D). No new matter has been added by these amendments, and entry is respectfully requested.

In the Office Action, the Examiner has formally rejected claims 1-3 under 35 U.S.C. § 112, first paragraph, as lacking support in the specification. The Examiner argues that there is no support in the specification for the claimed "monoalkylthiophosphites, dialkylthiophosphites, trialkylthiophosphites, and salts of phosphites and thiophosphites." In view of the amendment to replace "monoalkylthiophosphites, dialkylthiophosphites, trialkylthiophosphites" with "a thiophosphite," which the Examiner acknowledges is supported in the specification, reconsideration and withdrawal of the § 112 rejection are respectfully requested.

In the Office Action, the Examiner has further rejected claims 1-3 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2003/0000866 of Cain ("Cain") in view of U.S. Patent Application Publication No. 2001/0044389 of Komiya et al. ("Komiya") and U.S. Patent No. 4,169,799 of Sung et al. ("Sung"). The Examiner argues that Cain discloses a lubricating oil for transmissions comprising a mineral base oil having a kinematic viscosity of about 3.0 to about 7.5 cSt at 100°C and a phosphorus compound, such as dialkylthiophosphate and trialkylphosphate. These compounds are allegedly present in the composition from about 0.1 wt% to about 10 wt% so that the amount of phosphorus based on the total mass of the composition allegedly overlaps the claimed range. The Examiner further argues that Cain teaches a polymethacrylate viscosity index improver having a molecular weight of about 800 to about 6000, which improver is added to the composition in an amount of about 3 wt% to about 40 wt%, allegedly sufficient to raise the kinematic viscosity of the composition to about 5.0 to 6.0 mm^2/s at 100°C absent evidence to the contrary. Finally, Cain allegedly further teaches a dithiocarbamate compound in an amount that sulfur is less than 0.15 percent by mass

based on the total composition. The Examiner acknowledges that Cain does not specifically disclose the %Cp of the oil.

However, the Examiner argues that Komiya discloses a lubricating composition containing mineral oils, such as paraffinic and naphthenic mineral oils which have a kinematic viscosity of 1 to 4 mm^2/s as claimed. The %Cp of the oil in Komiya is allegedly disclosed as 70 or higher. Accordingly, the Examiner takes the position that the transmission oils disclosed by Cain and Komiya display the same characteristics and that it would have been obvious for the transmission oil composition disclosed by Cain to comprise a base mineral oil having a %Cp of 75-81, as taught by Komiya, for enhancing low temperature fluidity.

Finally, the Examiner cites Sung as teaching that alkaline earth metal sulfonates are well known in the art as sulfonate detergents for use in lubricating compositions. Accordingly, the Examiner concludes that it would have been obvious to utilize an alkaline earth metal sulfonate as the sulfonate detergent in the Cain composition. Applicants respectfully traverse this rejection and the arguments in support thereof as follows, and respectfully request reconsideration and withdrawal of the rejection.

As previously explained on the record, the purpose of the presently claimed invention is to provide low viscosity transmission lubricating oil compositions which can enhance fuel efficiency and improve the durability of gears and the shifting properties of wet clutches, including long-lasting shifting properties. Applicants have developed the presently claimed low viscosity, low sulfur compositions that are obtained by adding appropriate amounts of (B) a specific phosphorus compound in an amount of 0.025 to 0.05 mass % or 0.03 to 0.035 % as P, (C) a viscosity index improver comprising a non-dispersion type polymethacrylate (PMA) having a number average molecular weight of from 5,000 to 35,000, (D) a sulfur-containing compound which is at least one compound selected from the group consisting of thiazole compounds, thiadiazole compounds, and sulfurized ester compounds, as well as a calcium sulfonate, to (A) a specific mineral lubricating base oil having a kinematic viscosity of 2.3 to 3.4 mm^2/s or of 2.5 to 3.3 mm^2/s at 100°C and a %Cp of not less than 70 or of 73 to 82. In the presently claimed composition, sulfur is contained in an amount of 0.15% by mass or less.

Cain teaches mineral oil based gear oils and transmissions fluids which comprise a lubricant basestock and at least one functional additive. The lubricant basestock comprises a

specific mineral oil and a specified proportion of aliphatic saturates. The lubricating oils may additionally contain (A) at least one polymer, (B) at least one fluidizing agent, (C) at least one antiwear or extreme pressure agent such as a sulfur compound, phosphorus-containing compound, and/or boron-containing compound, and (D) at least one antioxidant.

Cain teaches that the sulfur compound may be selected from sulfurized olefins, metal and ashless dithiocarbamates, or mono- or polysulfide compositions, such as di-, tri-, and tetrasulfide materials (paragraph [0058]). However, Cain does not teach or suggest the claimed thiazole, thiadiazole, or sulfurized ester compounds and thus does not teach or suggest the sulfur-containing component of the presently claimed composition.

Additionally, the Examiner argues that Cain discloses in paragraphs [0056] and [0197] a dithiocarbamate compound in an amount that the sulfur is less than 0.15 percent by mass based on the total composition. Even if, *arguendo*, Cain were to teach the claimed sulfur compounds, Applicants respectfully traverse the Examiner's conclusion that Cain teaches the claimed sulfur content. In paragraph [0197], Cain teaches that the lubricating compositions may contain "at least about 1% by weight of an amine antioxidant, a dithiocarbamate antioxidant, or mixture thereof." Zinc diamyldithiocarbamate, for example ([paragraph [0085]), contains 24.2% sulfur, and sodium diamyldithiocarbamate contains 26.3% sulfur. Accordingly, if the composition contains at least about 1% of a dithiocarbamate, it will necessarily contain more than 0.15% by mass sulfur.

Further, in paragraph [0056], Cain teaches that the antiwear or extreme pressure agent may be included in an amount of 0.05% to about 10% by weight. However, the composition is not limited to sulfur-containing antiwear and extreme pressure agents, but may further contain sulfur-containing antioxidant that will also contribute to the sulfur content of the compositions. Cain does not teach or suggest specific sulfur contents of the compositions or limiting the sulfur content to any particular amount, such as less than 0.15% by mass as claimed. Further, the Examples of Cain contain considerable amounts of sulfur. For example, lubricating compositions 6-10 (Examples 6-10) contain 3.2 to 3.75 wt% of Product of Ex S-1 (42.5 wt% sulfur, see paragraph [0076]), resulting in 1.36 to 1.59 wt% of sulfur in these compositions. Therefore, Applicants respectfully traverse the Examiner' assertion that the sulfur content in the Cain composition is less than 0.15 percent by mass.

For at least these reasons, Cain does not teach or suggest all of the claimed elements, including the sulfur-containing compound and the sulfur content. Further, even modification of the Cain composition to include the mineral oil of Komiya and the alkaline earth metal sulfonate of Sung, as suggested by the Examiner, would still not result in a composition containing the claimed components and properties because neither secondary reference teaches the claimed sulfur component or sulfur content. Accordingly, even the proposed combination of references would not teach or suggest all of the claimed elements, and reconsideration and withdrawal of the § 103(a) rejection based on Cain in view of Komiya and Sung are respectfully requested.

In view of the preceding Amendment and Remarks, it is respectfully submitted that the pending claims are patentably distinct from the prior art of record and in condition for allowance. A Notice of Allowance is respectfully requested.

Respectfully submitted,

Osamu KUROSAWA, et al.

March 16, 2010 (Date) By: /Sandra M. Katz/

SANDRA M. KATZ
Registration No. 51,864
PANITCH SCHWARZE BELISARIO & NADEL LLP
One Commerce Square
2005 Market Street, Suite 2200
Philadelphia, PA 19103-7013
Telephone: 215-965-1330
Direct Dial: 215-965-1344
Facsimile: 215-965-1331
E-Mail: skatz@panitchlaw.com

SMK:smk
Enclosure: Petition for Extension of Time (one-month)